

## LCA Database in Italy

### A Database to Support Italian LCA Practitioners

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In 1997, the Italian Environmental Protection Agency ANPA (Agenzia Nazionale per la Protezione dell'Ambiente) promoted the construction of a database, called I-LCA, to support Italian LCA practitioners. The aim of this database was to organise information regarding energy and the environmental performance of different processes and services in a format that would be useful for LCA analysts (companies, research institutes, public decision makers).

ANPA is the Italian Governmental Organisation created to co-ordinate actions and activities that involve environmental aspects of (Italian) national interest. In particular, ANPA is concerned with promoting the use of LCA in both industrial and service sectors. Another area of interest involves providing consumers with better information on the environmental impact of products.

To address these issues, ANPA created a special team, the Unit for Products Environmental Quality, which is working on different applications of LCA within the fields of production and service. This work ranges from the review of LCA studies, as used in Eco-label application forms, to the development of environmental labels in accordance with the ISO 14.020 series standards. ANPA is the competent Italian body for the Eco-label award scheme.

The first version of I-LCA used some of the readily available, public domain databases (such as ETH-ESU, CORINAIR, APME and others) as main sources. The project ended at the beginning of September 1999. This first version of I-LCA was divided into the following four main sectors:

1. Materials and processes
2. energy
3. transport
4. end of life

For each sector, a set of modules was built in the form of input-output tables. A brief description of the system examined, based on the original information, was also given. During this first project, most of the work consisted of the translation of the module descriptions into the Italian language and in the construction of a list of inputs and outputs with regard to the functional unit of the system.

Before distributing the software to the public, ANPA decided to promote a critical review to validate the approach and the information contained in I-LCA. The review process began in October 1999 and was completed in early 2000.

The main conclusion of the review process was that the first version would have to be revised substantially before it could be published. Consequently, the first version of the I-LCA was

only distributed within the Agency for internal purposes. ANPA instead decided to start with the second version of the project immediately after the end of the critical review work.

At the beginning of 2000, ANPA started the development of the second version of I-LCA with the support of Associazione Impresa Politecnico (Milano) and three consulting companies: Ambiente Italia (Italy), Boustead Consulting Ltd. (U.K.) and Ecobilan (France). The first version was taken as the starting point and was adapted in accordance with the critical review recommendations.

This second project is now at its end and I-LCA is available on CD-ROM (please contact Dr. Pretato for a free copy at [i-lca@anpa.it](mailto:i-lca@anpa.it)) or it can be downloaded from the ANPA site ([www.sinanet.anpa.it/ecolprod](http://www.sinanet.anpa.it/ecolprod)). In addition, a paper about this database was given by a member of the ANPA Unit for Product's Environmental Quality at the Fourth International Conference on EcoBalance in Tsukuba (October 31-November 2, 2000).

At present, I-LCA contains about 400 modules organised in the same original four sectors; the software architecture is specially designed to let the user find the general information, input and output of the selected process or service in a user-friendly way. The sources of the information primarily remain the same as those used in the first version, with the addition of new data from the International Energy Agency (the main source of the energy mix information of all countries included in the energy sector of the database), ENEL (this is the principal Italian Electricity company and was used as the source of information regarding the Italian electricity grid) and SNAM (the main Italian natural gas producer, which collected and provided information regarding natural gas production and distribution).

The Energy Sector is organised into four main categories (solid fuels, electricity, natural gas and oil), each of which is comprised of several sub-categories. Each sub-category contains the modules with data and information about a specific operation (in the electricity category, for instance, the solid fuel sub-category includes some modules about electricity generation, electricity distribution and so on). At the moment, all of the information included in I-LCA is written in Italian.

I-LCA does not contain a calculation program. This omission was deliberate because the specific goal of the project was to build an open database, which could be used with all calculation models available on the market.

I-LCA will be updated and improved periodically with primary data collected from Italian industrial operations, as and when such information becomes available.